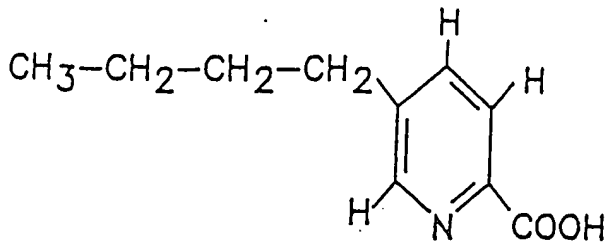

CH3–CH2–CH2–CH2
H
H
H
N
COOH

FIG. 1

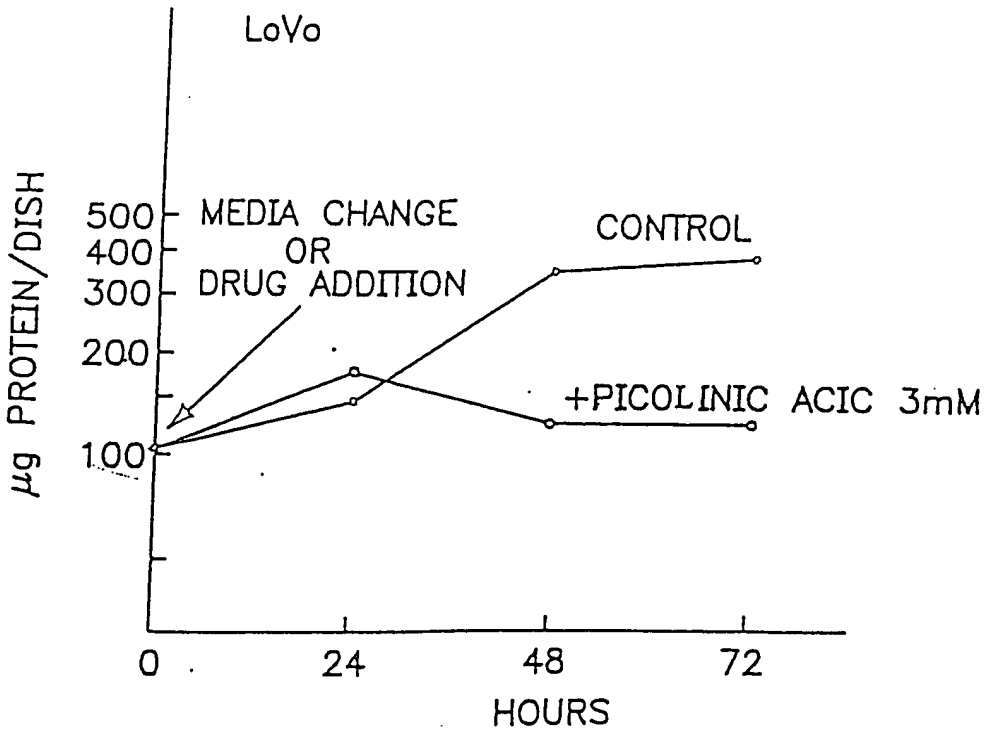

LoVo
μg PROTEIN/DISH
500
400
300
200
100
MEDIA CHANGE
OR
DRUG ADDITION
CONTROL
+PICOLINIC ACIC 3mM
0
24
48
72
HOURS

FIG. 2

FIG. 3A

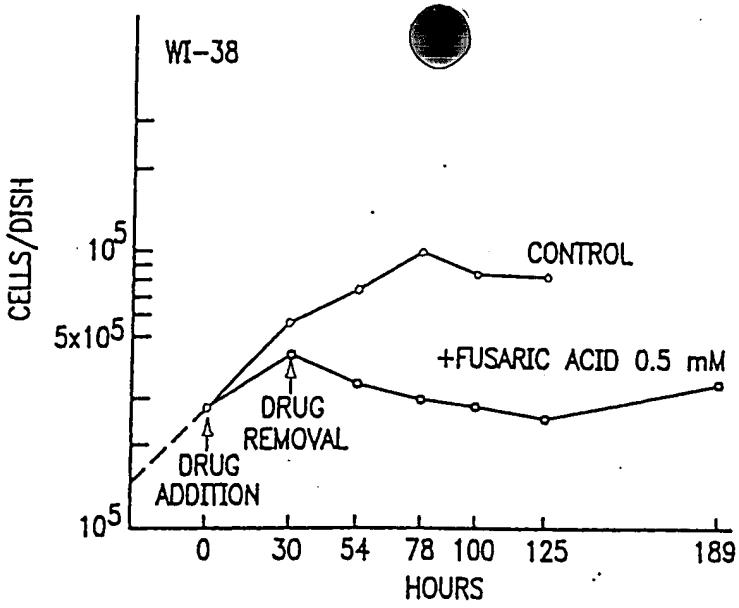



FIG. 3B

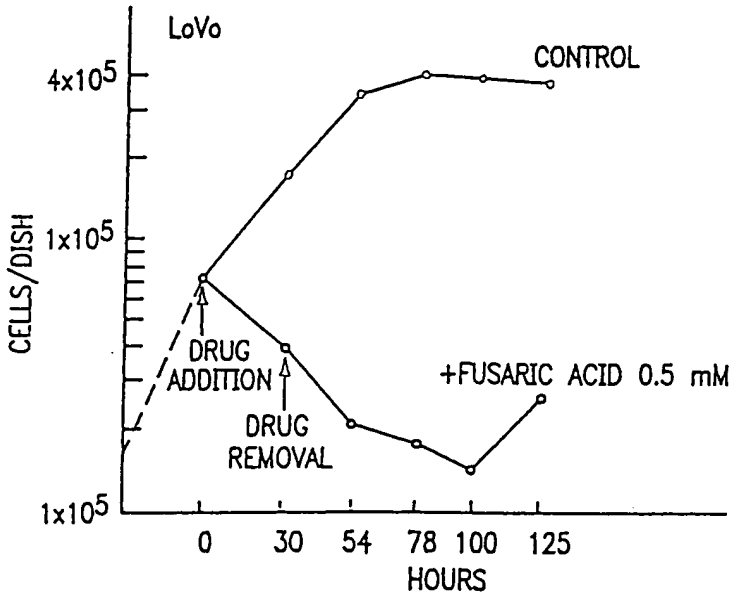



FIG. 3C

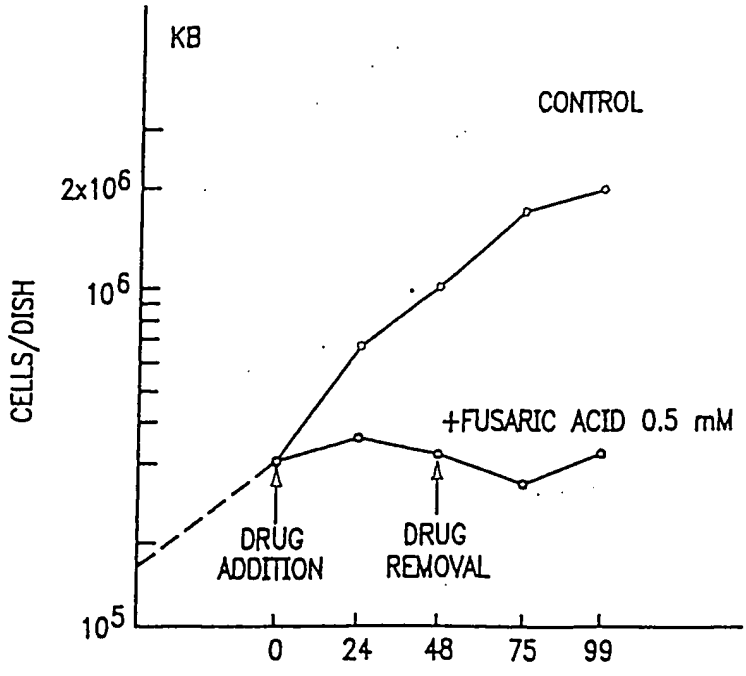


FIG. 4A

FIG. 4B

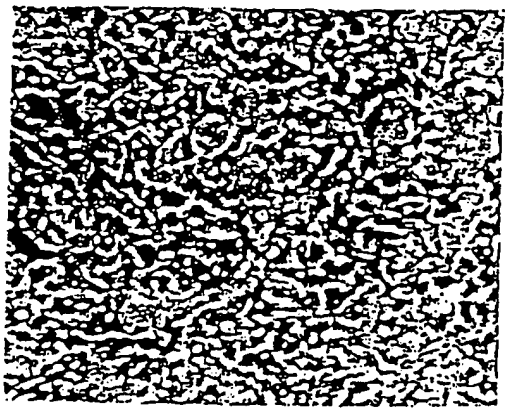


FIG. 4C

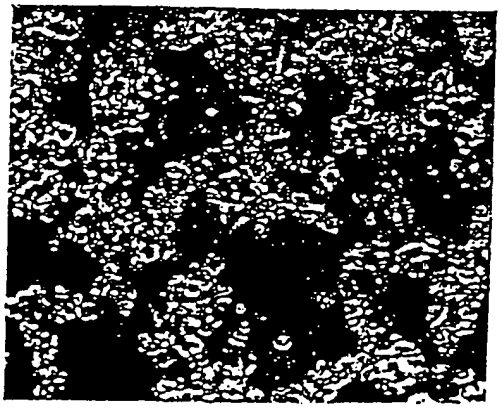


FIG. 4D

FIG. 5A

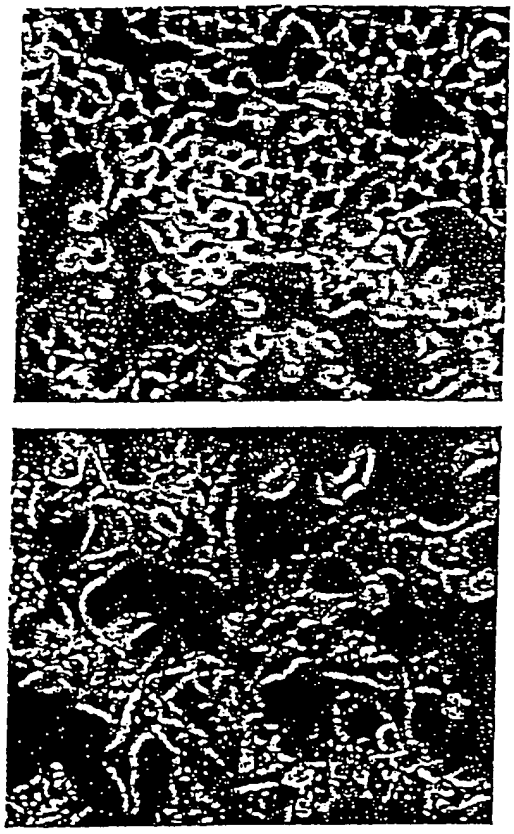


FIG. 5B

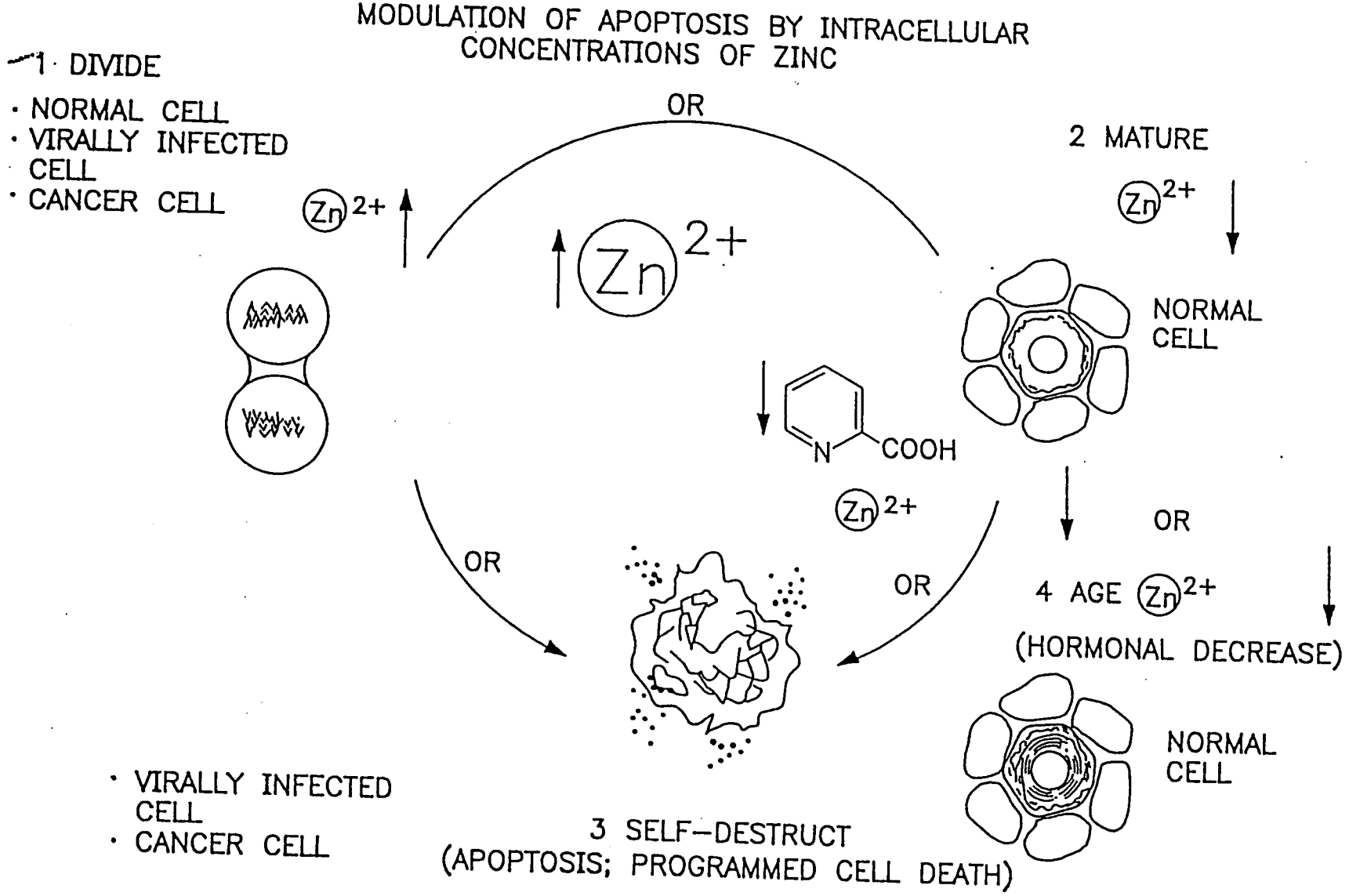

MODULATION OF APOPTOSIS BY INTRACELLULAR CONCENTRATIONS OF ZINC
1 DIVIDE
• NORMAL CELL
• VIRALLY INFECTED CELL
• CANCER CELL
OR
2 MATURE
Zn2+
NORMAL CELL
COOH
N
OR
OR
OR
4 AGE Zn2+
(HORMONAL DECREASE)
NORMAL CELL
• VIRALLY INFECTED CELL
• CANCER CELL
3 SELF-DESTRUCT
(APOPTOSIS; PROGRAMMED CELL DEATH)

FIG. 6

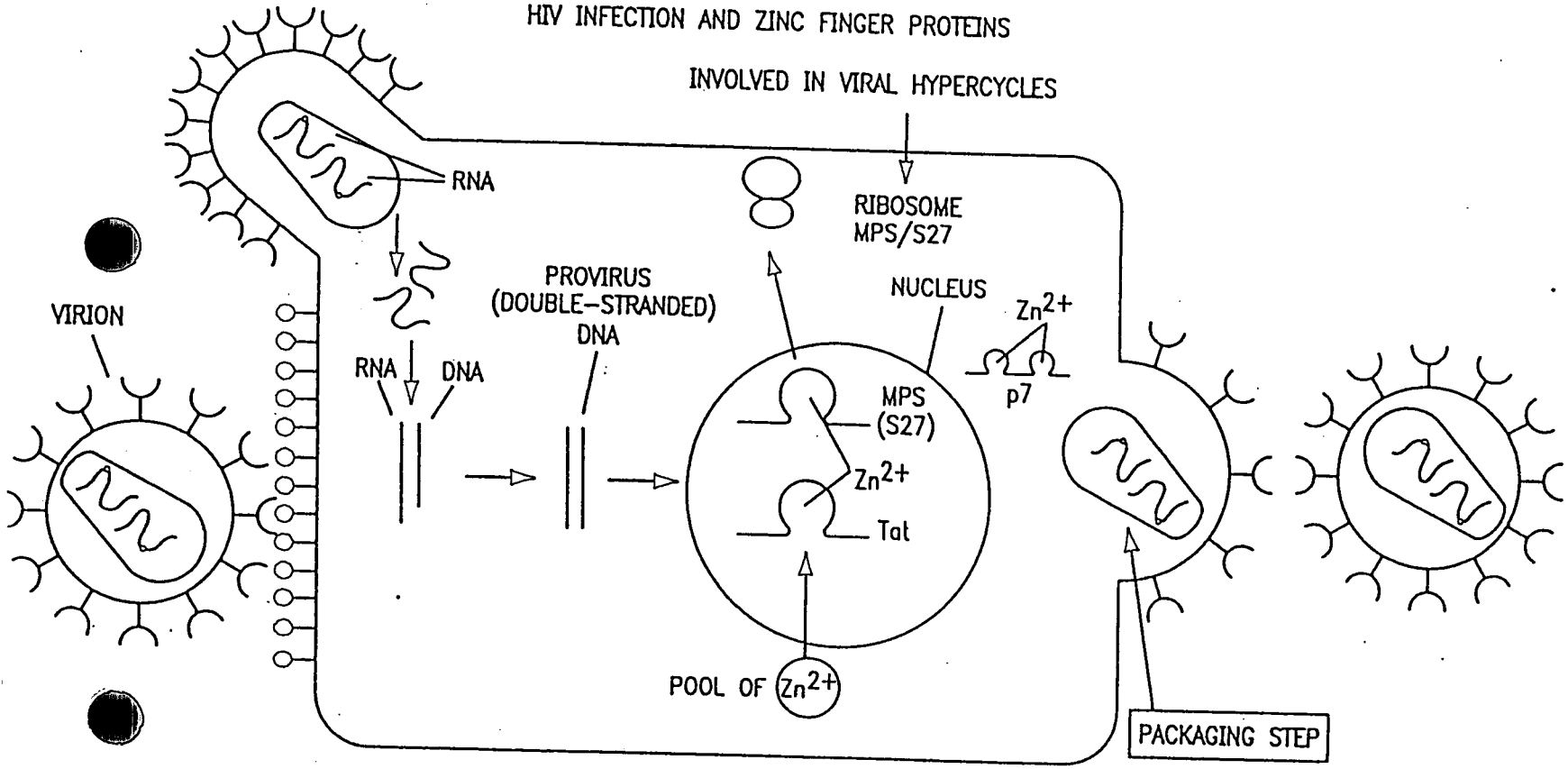

HIV INFECTION AND ZINC FINGER PROTEINS
INVOLVED IN VIRAL HYPERCYCLES
RNA
RIBOSOME
MPS/S27
VIRION
PROVIRUS
(DOUBLE-STRANDED)
DNA
NUCLEUS
Zn2+
RNA
DNA
MPS
(S27)
p7
Zn2+
Tat
POOL OF Zn2+
PACKAGING STEP

FIG. 7

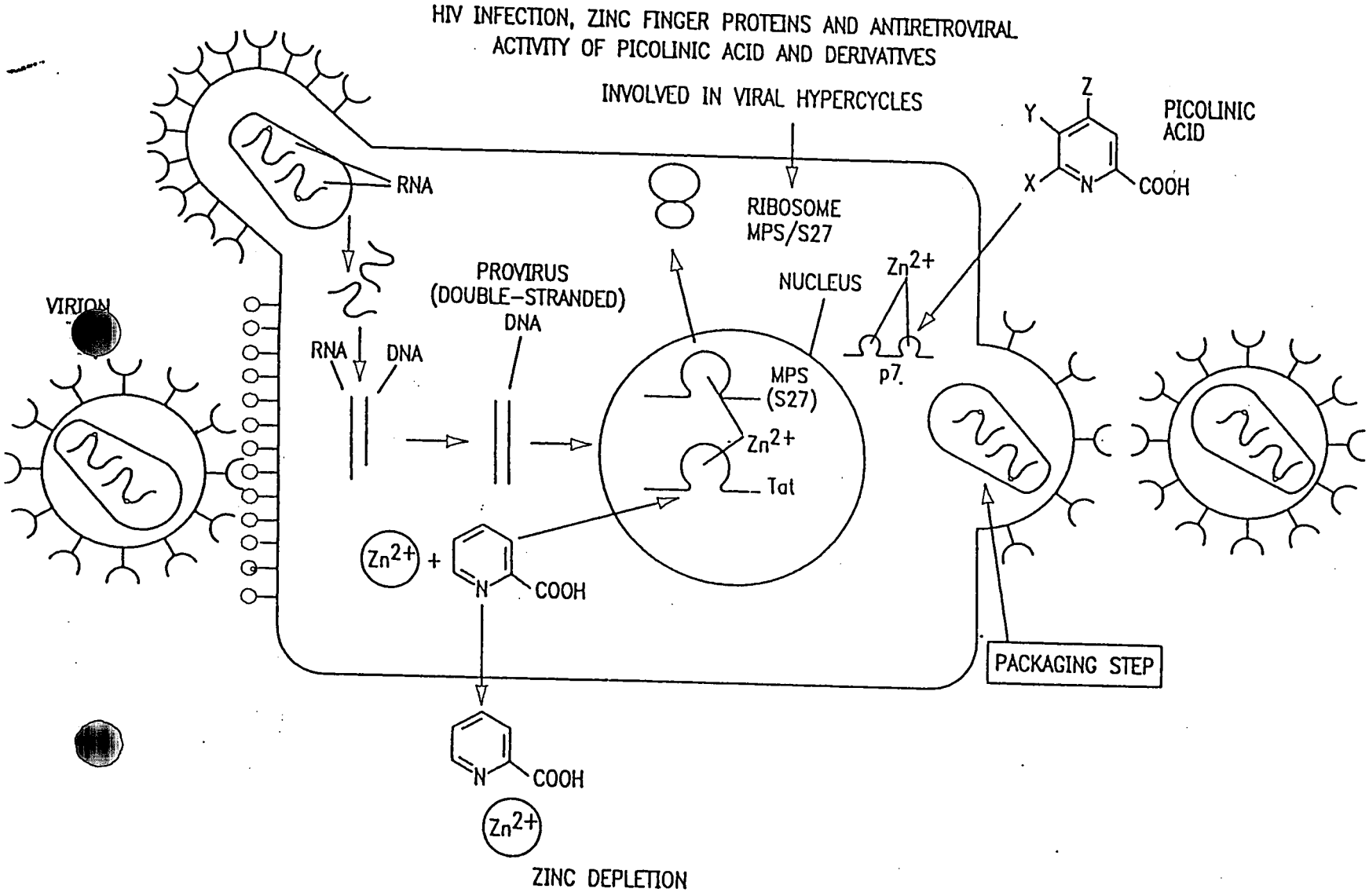
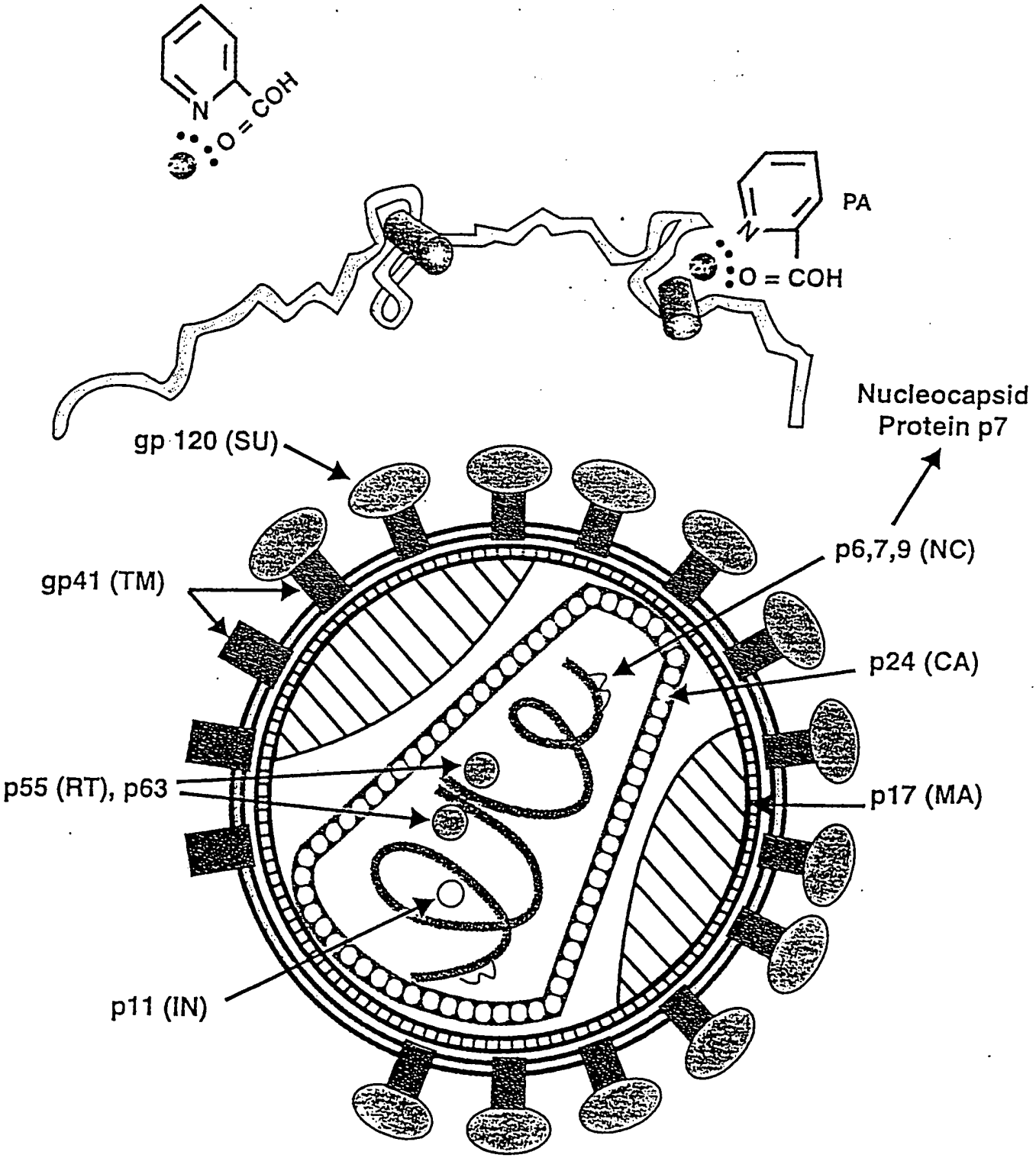
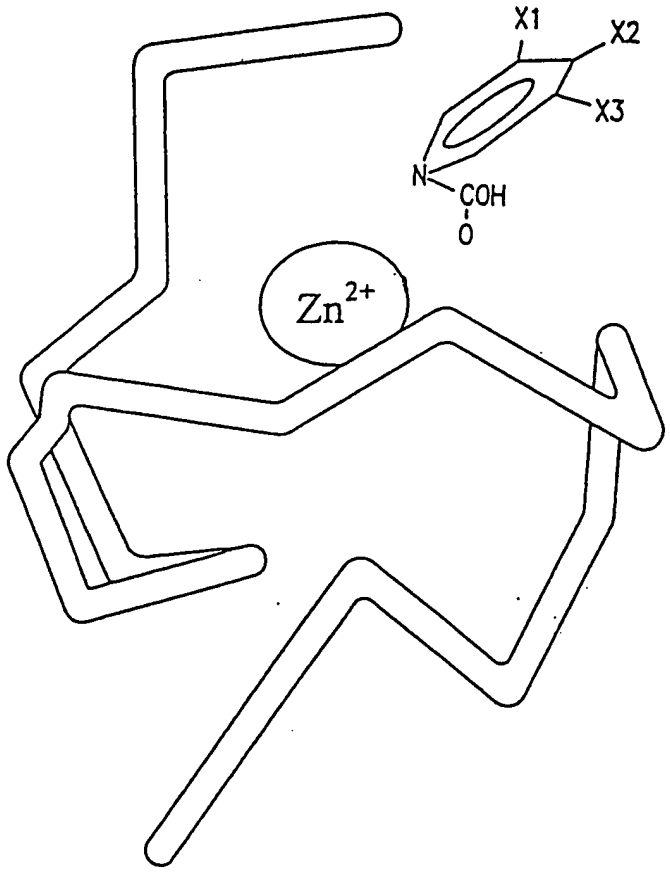

HIV INFECTION, ZINC FINGER PROTEINS AND ANTIRETROVIRAL ACTIVITY OF PICOLINIC ACID AND DERIVATIVES
INVOLVED IN VIRAL HYPERCYCLES
PICOLINIC ACID
Z
Y
X
N
COOH
RNA
RIBOSOME MPS/S27
VIRION
PROVIRUS (DOUBLE-STRANDED) DNA
NUCLEUS
Zn2+
RNA
DNA
MPS (S27)
p7
Zn2+
Tat
Zn2+ + N COOH
PACKAGING STEP
N COOH
Zn2+
ZINC DEPLETION

FIG. 8

# Disruption of Zinc Finger Binding Domains of Retroviral Proteins by PA



THE WIDE SPECTRUM ANTIVIRAL ACTIVITY
OF PA-Xn ARE DUE TO DISRUPTION OF THE
ZINC FINGER BINDING DOMAINS
OF RETROVIRAL PROTEINS




PA-Xn ABOLISH THE ZINC FINGER PROTEINS
ABILITY TO BIND RNA

FIG. 10

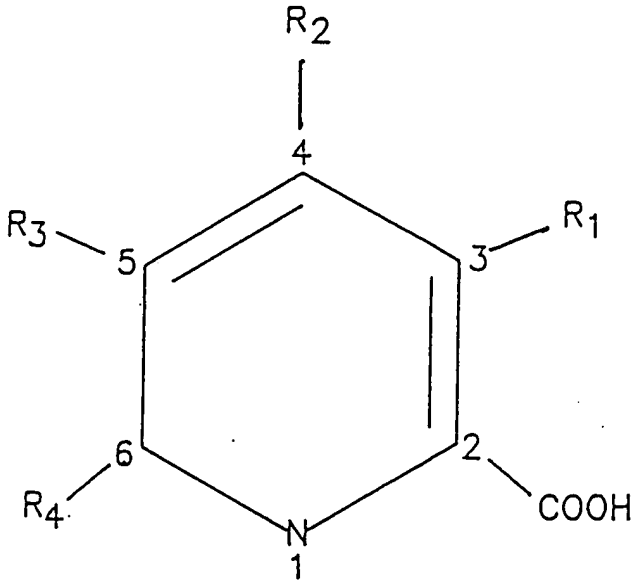



FIG. 11

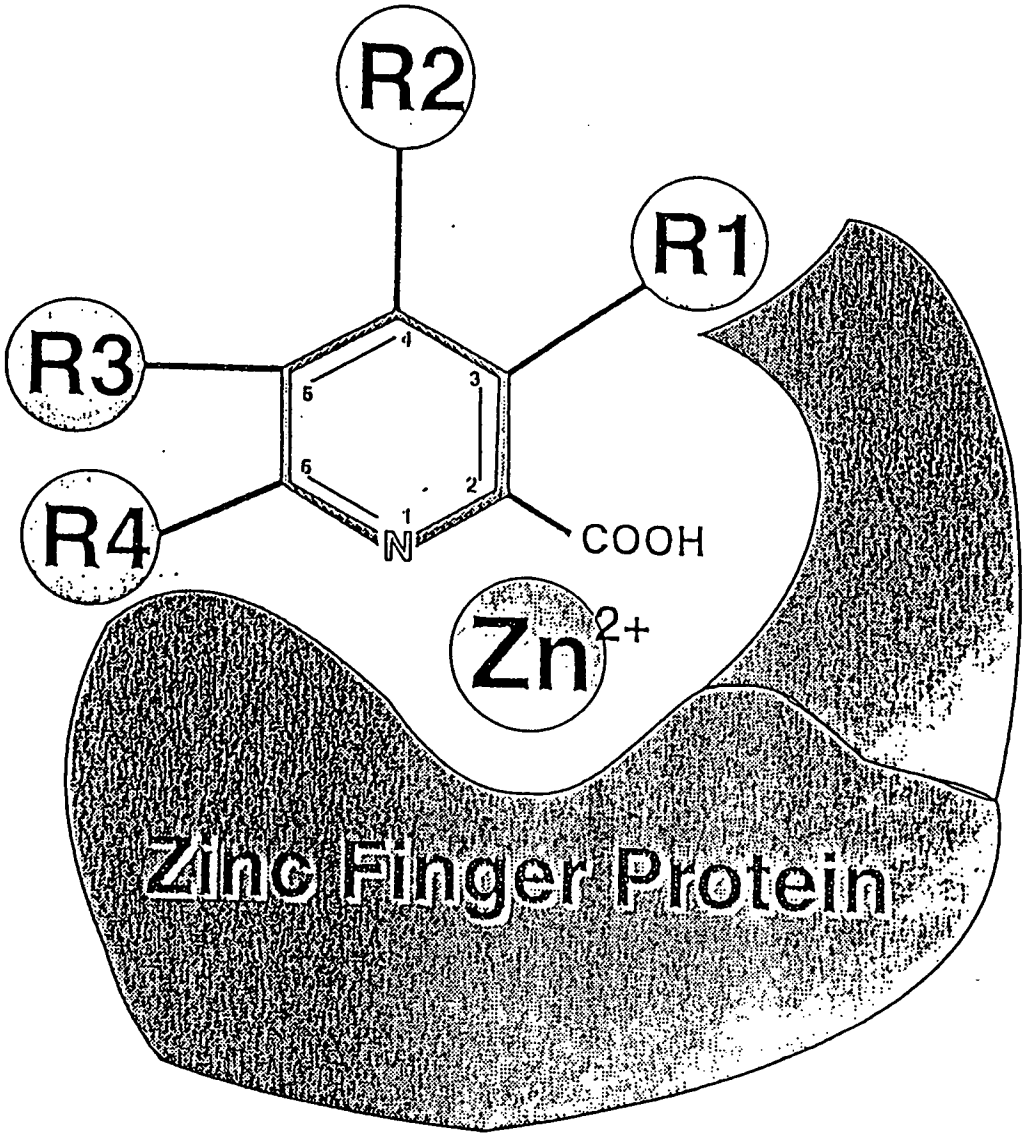



Fig. 12

# VIRAL INFECTION, RIBOSOMAL PROTEINS AND HSPs

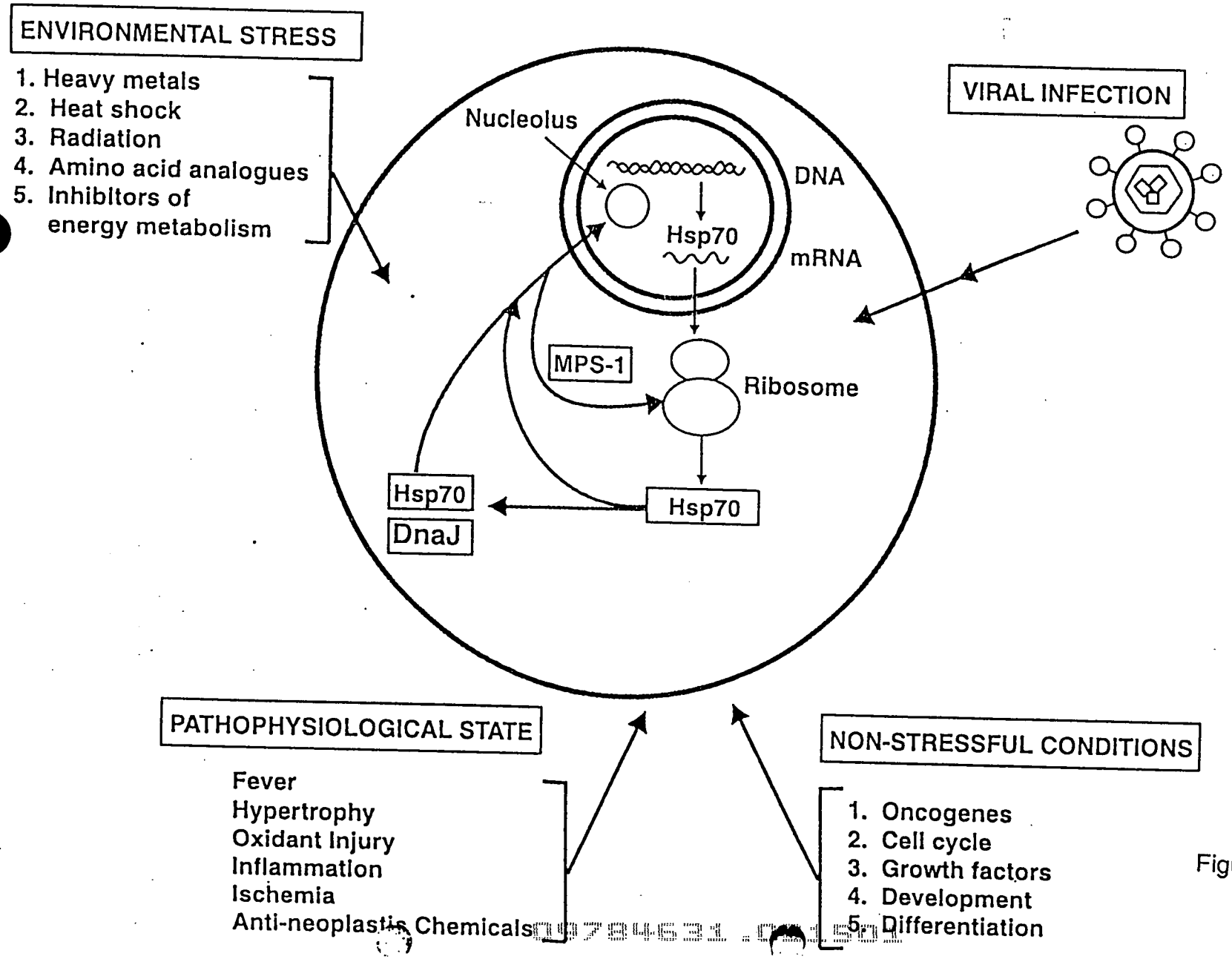



Figure 13